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American ferns — VI. Species added to the flora of the United States from 1900 to 1905

LUCIEN MARCUS UNDERWOOD

Since the beginning of the serious study of our native ferns, there has probably been no similar period in which so many additions have been made to our flora as in the five years just passed. This has been due to several causes, the most important of which is the opening up to exploration of the really tropical portion of southern Florida, with the consequent addition of a large number of species mostly more or less common in the lowlands of the Bahamas and the Antilles. Some of the additions are due to the closer analysis which has been given in recent years to certain genera, particularly *Selaginella* by Professor Georg Hieronymus, *Isoetes* by Mr. A. A. Eaton, and *Botrychium* by the present writer. The proper delimitation of certain species of central and southern Florida has depended on special conditions. For example, while the writer was collecting in Florida during the winter of 1890–91, two species already known from that state were found growing together in similar situations on limestone rocks. Although these ferns had been referred, the one to a West Indian species and the other to a variety of the same, on collecting these species fifteen years ago the writer felt as fully as he does now (1) that the two had full specific distinctness, and (2) that the places to which they had been assigned by the "authorities" was not the correct one. Two essential conditions, however, were then lacking to justify their separation, and the writer has waited until these conditions might be changed:

1. It was essential for accuracy to make examination of certain types in European herbaria; this has not been practicable until the past summer; and

2. It was necessary to study a large collection of West Indian species of *Asplenium* in order to delimit the boundaries of related species. This has now become possible at home, for while the Kew herbarium and the Berlin collections, including the well

known West Indian herbarium of Krug and Urban, both contain material not found in any other, the collections now accumulated at the New York Botanical Garden exceed either, or both together for that matter, in the richness and completeness of the series of West Indian ferns.

A number of the species in the following list have already been reported by Mr. A. A. Eaton, whose collections in South Florida were partly listed in the Fern Bulletin for April, 1904; others have been reported by Mr. Maxon, by Mr. Gilbert, and by the writer, in various short notes. It is thought desirable to bring these together in a single list which will supplement the last (1900) edition of *Our Native Ferns and their Allies*. It will be noted that the list contains six genera and forty-nine species from the limits of the United States, not included in that work; two of these, however, displace species already reported under other names, so that the net increase is forty-seven species. Besides these a considerable number of varieties have been described; some of these are based on mere sports like the var. *Hortonae* of *Asplenium platyneuron*, and *Pellaea atropurpurea cristata*, while others may represent something more permanent in character. No attempt has been made to list these here. Among the forty-seven species, two are plants introduced from cultivation, which have apparently become locally established. One species of *Equisetum* and four species of *Selaginella* must be placed in the list of "*Species inquirendae*," inasmuch as they are imperfectly known. Removing these two doubtful series from the list there are still forty native species which represent *bona fide* additions to our known flora. The list follows, arranged in systematic order:

OPHIOGLOSSACEAE

BOTRYCHIUM ALABAMENSE Maxon, Proc. Biol. Soc. Washington **19**: 23. 1906. (Type from Mobile, Alabama, *Dukes*.)

BOTRYCHIUM CALIFORNICUM Underw. Torreya **5**: 107. 1905.

This species is the Californian plant hitherto mistaken for *B. silaifolium* Presl. *B. occidentale* Underw. becomes a synonym of the latter species, having been based on a tall-growing form.

BOTRYCHIUM ONONDAGENSE Underw. Bull. Torrey Club **30**: 47. 1903. (Type from Onondaga county, New York, *Underwood*.

RANGE: Central New York, northern Michigan, Montana (?).

BOTRYCHIUM TENUIFOLIUM Underw. Bull. Torrey Club **30**: 52. 1903. (Type from Alexandria, Louisiana, *Hale*.)

RANGE: Southern States from Alabama to Louisiana and Missouri. Closely related to *B. obliquum* Muhl.

SCHIZAEACEAE

ACTINOSTACHYS GERMANI Fée, Mém. Foug. **11**: 123. *pl. 29. f. 3*. 1866. (Type from Guadeloupe, *Deshaies*).

This remarkable discovery of Mr. A. A. Eaton in South Florida adds a fourth member of this family to our flora, and gives to a hitherto rare and local tropical species an unexpected distribution. Like *Schizaea pusilla*, this new species, although larger, is still so inconspicuous that it would be readily passed over by any except the most careful collector of ferns, and quite likely has a much wider range than has hitherto been attributed to it. The genus is closely related to *Schizaea* but has penicillate spikes.

LYGODIUM JAPONICUM (Thunb.) Sw. Jour. Bot. Schrader **1800**^{2}: 106. 1801.

Ophioglossum japonicum Thunb. Fl. Jap. 328. 1784. (Type from Japan, *Thunberg*.)

Escaped from cultivation near Thomasville, Georgia, and at several places near Mobile, Alabama, where it is growing like a wild plant. Mr. W. D. McNeill has sent me a fine series of specimens which were very naturally taken for a native species by their collector.

POLYPODIACEAE

POLYPODIUM HESPERIUM Maxon, Proc. Biol. Soc. Washington **13**: 200. 1900. (Type from Washington, *Gorman 642*.)

A segregate from *P. vulgare* which includes most or all of the forms hitherto referred to that species from the Rocky Mountains westward to the Pacific.

Campyloneurum latum Moore, Ind. Fil. 225. 1861. (Type from the West Indies.)

South Florida: 14 miles south of Cutler, *A. A. Eaton.*

Campyloneurum costatum (Kunze) Presl, Tent. Pterid. 190. 1836.

Polypodium costatum Kunze, Linnaea **9**: 38. 1835. (Type from Cuba, *Poeppig.*)

South Florida: 5 miles north of Everglade, *A. A. Eaton.* Ranges also to Cuba and Jamaica.

Campyloneurum angustifolium (Sw.) Fée, Mém. Foug. **5**: 257. 1852.

Polypodium angustifolium Sw. Nov. Gen. et Sp. 130. 1788. (Type from Jamaica.)

South Florida: 14 miles south of Cutler, *A. A. Eaton*, by whom it has been reported already. Ranges also to the Bahamas, Cuba, Jamaica, Hispaniola, and Porto Rico.

The four species of *Campyloneurum* now known from our flora may be distinguished as follows:

Leaves narrow, a centimeter or less wide.	*C. angustifolium.*
Leaves broad, 3–8 cm. wide or more.	
Veins obscure; texture opaque.	*C. costatum.*
Veins conspicuous.	
Leaves with a narrow wing, decurrent to near the base.	*C. Phyllitidis.*
Leaves long-stalked; areolae usually divided by a longitudinal vein.	*C. latum.*

Adiantum modestum Underw. Bull. Torrey Club **28**: 46. 1901. (Type from Roswell, New Mexico, *Earle.*)

New Mexico: Roswell, *Earle.*

Adiantum hispidulum Sw. Jour. Bot. Schrader **1800**^{2}: 82. 1801. (Type from Australia.)

Georgia: Growing in a well near Thomasville, *R. M. Harper 1171.* Reported by Mr. Harper as established at this place.

A common species in cultivation and likely to become established in other favorable locations.

Hypolepis repens (L.) Presl, Tent. Pterid. 162. 1836.

Lonchitis repens L. Sp. Pl. 1078. 1753. (Type from Martinique, based on Plumier *pl. 12.*)

This tropical fern, which becomes almost a climbing species in the West Indies, has been found in Florida by Mr. C. S. Williamson, as already reported (Torreya **3**: 18. 1903). He says of it: "It was quite abundant in the woods on the borders of Lake Apopka, which at Oakland is quite a distance from the town."

The plant resembles *Dennstaedtia* in habit, but has the indusium of *Cheilanthes*. The specimens sent by Mr. Williamson have a height of only 60 cm.

ASPLENIUM ANDREWSII A. Nelson, Proc. Biol. Soc. Washington **17**: 174. 1904. (Type from Boulder Creek, Colorado, *Andrews*.)

This new discovery from Colorado is a member of the *Adiantum-nigrum* group of *Asplenium* and is closely related to *Asplenium Adiantum-nigrum* of central and southern Europe. Among our species it will stand nearest *A. montanum*.

Asplenium verecundum Chapman in herb. sp. nov.

Rootstock short, erect or inclined, covered with more or less persistent bases of the leaf-stalks; leaves densely cespitose, bi-tripinnate, 16–40 cm. long, elliptic-lanceolate, 2.5–6 cm. wide, tapering both ways from the middle, borne on stalks 2–10 cm. long, which are smooth and brownish-purple as are also the rachises; pinnae (in larger specimens) bipinnate at base, gradually simpler outwards, or (in smaller specimens) pinnate throughout or with the basal pinnule 2–3-lobed or even divided into 2–3 segments; segments obovate or broadly oblanceolate, obtuse or rarely truncate at the apex and often mucronulate, decurrent on a narrowly winged rachis, bearing a single vein with a short sorus in or near the center; texture delicate, membranous; indusia rather broad, delicately membranous, with entire margins.

RANGE: Florida, northern, central, and southern; specimens have been examined as follows:

Jackson County: *Chapman* (type). Marion County: near Ocala, 1879, *Miss Reynolds; John Donnell Smith;* 1891, *Underwood 1810*. Scott's Spring near Ocala, 1891, *Underwood 1818*. Belleview, 1891, *Underwood 1876*. Hernando County: Istachatta, 1891, *Underwood 2001 b, 2001 c*; *Nash 1396 a*. Dade County: Biscayne Bay, 1887, *Isaac Holden;* 1888, *R. M. Monroe*. Between Cutler and Longview Point, 1903, *Small & Carter 854, 1156*. Miami, 1904, *E. G. Britton 91*.

With the original sheet of Chapman in the Columbia herbarium is a faded photograph marked "*Asplenium anchorita*, Scott's Well, near Ocala, Florida," and also "Rec'd from Miss Murray, Sept. 7, 1855." With this is a letter to Dr. Torrey from Amelia M. Murray, mentioning the collection of the fern at the above-named place. This interesting sink-hole later known as Scott's Spring, where the plant was evidently first collected, was visited in 1891 by the writer, who found the fern still growing there. It will be seen from the localities given that the plant ranges the entire length of the state. The name *anchorita* has been given as a synonym in the first edition of Chapman's Flora (page 593) and the highly appropriate name *verecundum* taken up from Chapman's herbarium was used as a *nomen nudum* in Fournier Mex. Pl. 111, in 1872. The fern is at once the most modest and the most graceful of our species of *Asplenium*.

Asplenium Curtissii sp. nov.

Rootstock short, erect or inclined; leaves 30–50 cm. long, bipinnate to tripinnatifid, lanceolate or lanceolate-ovate, 5–10 cm. wide, broadest a little above the base, the basal pinnae nearly as long as those above, borne on grayish-brown stalks 12–14 cm. long; pinnae lanceolate, in larger plants bipinnatifid, in smaller plants pinnate with 2–4-toothed or lobed closely-set pinnules; segments acute or rarely obtusish, pointed, decurrent on the rachises with a rather broad wing; veins single, or forked in the segments which are toothed, each tooth with a separate excurrent vein; sori prominent; indusia broad.

RANGE: Central Florida; specimens have been examined as follows:

Citrus County: Lake Tsala Apopka, *Curtiss 3728* (type). Marion County: near Ocala, 1879, 1883, *Miss Reynolds*. Indian Spring, 4 miles S. E. of Ocala, 1891, *Underwood 1813*. Belleview, 1891, *Underwood 1875*. Hernando County: Istachatta, 1891, *Underwood 1997, 2001, 2001 a;* 1897, *Curtiss 5683*.

The combined herbaria at the New York Botanical Garden contain seven sheets of *Curtiss 3728*, which represents the first plants collected and distributed. Two of these have a small plant of the previous species included on the same sheet, but the others are straight examples of the present species. We take pleasure in dedicating this very distinct species to Mr. Allen H.

Curtiss, whose botanical explorations in Florida have added so much to our knowledge. The species often grows in company with *Asplenium verecundum* Chapm., and we have collected the two growing together at three distinct localities. All the stations mentioned are within a circle whose radius is only twenty-five miles.

This species is readily distinguished from *Asplenium verecundum* by its shape, the lower pinnae not being reduced as in that species, by its larger size, coarser texture, and numerous other characters. It is scarcely necessary to add that the two plants have long posed under the names *Asplenium myriophyllum* or *A. rhizophyllum* either as species or varieties. *A. myriophyllum* is an entirely distinct species described originally from Jamaica. *A. rhizophyllum* (Thunb.) Kunze came originally from Dominica, and is a plant which roots from a prolonged apex as illustrated by Smith (Pl. Ic. Ined. **2** : *pl. 50*). The name, moreover, is preoccupied by *Asplenium rhizophyllum* L.

ASPLENIUM BISCAYNIANUM (D. C. Eaton) A. A. Eaton, Fern. Bull. **12** : 45. 1904.

Asplenium rhizophyllum var. *biscaynianum* D. C. Eaton, Bull. Torrey Club **14** : 97. *pl. 68.* 1887. (Type from Biscayne Bay, *Holden.*)

SOUTHERN FLORIDA. Collected at Biscayne Bay in 1887 by Isaac Holden, in 1888 by R. M. Monroe, in 1903 by A. A. Eaton, and in 1904 by E. G. Britton. Specimens of all these collections are represented in the herbaria at the New York Botanical Garden. There is a suspicion that this species may prove a hybrid of *Asplenium dentatum* L. and *A. verecundum* Chapm., both of which grow in its immediate vicinity. We agree with Mr. A. A. Eaton in recognizing this as a distinct species, nor should we differ did we know the above suspicion of hybridity to represent the truth of the matter. Species in taxonomy are the units of classification and their origin from others by variation, by hybridity, by mutation, or by any other process should have nothing to do with the simple taxonomic problem, while of the very highest interest in the biological history of the species.

ASPLENIUM MUTICUM Gilbert, Amer. Bot. **4**: 86. 1903. (Type from Bermuda.)

CENTRAL FLORIDA; also found in the Bermudas, whence it was described by Mr. Gilbert.

ASPLENIUM EROSUM L. Syst. Nat. ed. 10. **2**: 1324. 1759. (Type from Jamaica, based on Sloane, Voy. Jam. **1**: *pl. 33. f. 2.*)

CENTRAL FLORIDA: Cedar hammock, Sumpter County, 1894, *F. L. Lewton.*

This is the plant reported by Mr. Maxon in Torreya **3**: 185. 1903, and referred to a form of *A. auritum* Sw., and it represents one of the forms usually referred to that name from various West India islands. We have material similar to the Florida plant at least from Cuba, Jamaica, Hispaniola, and Porto Rico; much of the Jamaica material, however, which has been referred to *A. auritum*, is of quite a distinct type. In establishing *A. erosum*, Linnaeus based his name wholly on Sloane's plate; the plant of the present type, which agrees in every essential with Sloane's plate, must bear the name *A. erosum*, and, for the present, it will be left an open question as to whether all the so-called *A. auritum* Sw. of the West Indies and Mexico shall be merged under this name. It should be noted that Swartz cited the same plate of Sloane in establishing his *Asplenium auritum*, but in this case there is probably a specimen in Swartz's herbarium which will naturally take precedence of a cited plate in determining the type of the species. The name *Asplenium erosum* has unfortunately been used by various writers for species widely different from the one to which the name was originally given. We are fortunate to be able to get back to a real foundation for the application of the name. Sloane's plant is preserved in the British Museum.

CEROPTERIS VISCOSA (D. C. Eaton) Underw. Bull. Torrey Club **29**: 631. 1902.

Gymnogramme triangularis var. *viscosa* D. C. Eaton, Ferns of N. Am. **2**: 16. *pl. 48. f. 5.* 1880. (Type from Southern California.)

Stenochlaena Kunzeana (Presl) Underw. sp. nov.

Olfersia Kunzeana Presl, Tent. Pterid. 235. 1836 (*nomen nudum*).

Stems wide-climbing, more or less flattened, with occasional brownish scales when young, becoming smooth except for the abundant roots on the under surface; leaves 35–60 cm. or more long, oblanceolate, tapering both ways from above the middle, pinnate, borne on stalks 8–10 cm. long; pinnae 18- (or more) jugate, those of the upper portion lanceolate, 6–12 cm. long, 10–12 mm. wide, cuneate at the base, or long-tapering to a bordered stalk, irregularly and usually coarsely dentate, acute or acuminate at the apex, those of the lower portion of the leaf gradually reduced, the lowest becoming ovate or ovate-triangular, 1–2 cm. long; rachis winged especially when young, stramineous; midrib prominent, lateral veins oblique, simple or rarely forked about 1 mm. apart; sporophyls pinnate, the pinnae 6 cm. or more long, 5 mm. wide, borne on a short (3 mm.) stalk, midvein conspicuous, lateral veins distant, simple or usually forked at the base with the branches widely diverging.

Specimens have been examined as follows:

CUBA: 1822, *Poeppig;** *Wright 973* (type, in herb. D. C. Eaton "scandente arbores *Citri* ad 10 ped. in sylvis").

HISPANIOLA: "San Domingue" without collector or nearer locality, in herb. Mus. Paris; Plaisance, *Nash & Taylor 1492.*

PORTO RICO: *Balbis*, *Schwanecke.*

FLORIDA: Between Cutler and Longview Camp, 1903, *Small & Carter 856, 1157;* Ross' Hammock, Dade County, *A. A. Eaton 677.* All the Florida plants seen are sterile, but have the unmistakable foliage of this species.

The genus *Stenochlaena* thus added to our flora is related to *Struthiopteris* in its dimorphous simply pinnate leaves, but lacks an indusium; the sporangia soon become confluent on the narrow pinnae of the sporophyls and on this account the genus was merged by Hooker with *Acrostichum*, with which, however, it has no natural alliance. The Florida plants scarcely represent the norm of the species and apparently are straggling plants instead of climbing ones, as in more tropical forests.

DRYOPTERIS AQUILONARIS Maxon, Bull. Torrey Club **27**: 638. 1900. (Type from Cape Nome, Alaska, *Flett.*)

ALASKA: Once collected. A near relative of *Dryopteris fragrans.*

DRYOPTERIS PITTSFORDENSIS Slosson, Rhodora **6**: 75. 1904. (Type from Pittsford, Vermont, *Slosson.*)

Described as a hybrid of *D. spinulosa* and *D. marginalis.*

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*Poeppig's specimens were referred by Kunze (Linnaea **9**: 59. 1835) to *Lomaria longifolia* Kaulf. and it was on the incorrectness of this determination that Presl wrote "*Olfersia Kunzeana* (*Lomaria longifolia* Kunze *nec* Kaulf.)" in 1836 (Tent. Pterid. 235). We have seen Poeppig's plants both at Prague and Vienna.

Other specimens of the same were collected by the writer in 1890 near Cambridge, Massachusetts, as noted in our collections by Dr. Philip Dowell, who collected the same thing on Staten Island, N. Y., in 1904. The species appears to stand on about the same basis as *D. Boottii.* Until the present turma of varieties, now connected with the variable *D. spinulosa*, can be made the subjects of more serious field study than they have yet received in this country, this name may well stand.

Dryopteris stipularis (Willd.) Maxon in herb.

Aspidium stipularis Willd. Sp. Pl. **5**: 239. 1810. (Type from Martinique, citing Plumier, *pl. 23.*)

FLORIDA: Miami, *A. A. Eaton.* Specimens seen in the U. S. National Museum.

DRYOPTERIS AMPLA (H. & B.) Kuntze, Rev. Gen. Pl. **2**: 812. 1891.

Polypodium amplum H. & B. in Willd. Sp. Pl. **5**: 207. 1810. (Type from Caripe, Venezuela.)

FLORIDA: Between Cutler and Longview Camp, 1903, *Small & Carter 834, 835.* Already reported by Mr. A. A. Eaton (*cf.* Fern. Bull. **12**: 46).

This species forms a short caudex like a tree-fern; the peculiar mass of cinnamon-colored matted scales at the base of the leaf-stalks is strikingly characteristic.

MENISCIUM RETICULATUM (L.) Schkuhr, Krypt. Gewächse 5. *pl. 5.* 1804.

Polypodium reticulatum L. Syst. Nat. ed. 10. **2**: 1325. 1759. (Type from Martinique and based on Plumier's figure.)

Dryopteris reticulata Urban, Symb. Ant. **4**: 22. 1903.

FLORIDA: Alapattah near Miami, 1903. *A. A. Eaton 779.* Already reported by Mr. Eaton (*cf.* Fern Bull. **12**: 46).

The genus *Meniscium*, established by Schreber in 1791, is well characterized by its venation and sori, the latter being linear and naked and borne on cross veins connecting the lateral parallel veins which extend from the midribs to the margin forming a series of similar areolae. The validity of the genus was never questioned until Diels, in placing it in its proper tribe, in our judgment went too far by uniting it with *Nephrodium*, from which it has more recently been transferred to *Dryopteris* by Professor Urban.

Tectaria minima sp. nov.

Rootstock creeping, knotty ; leaves subcespitose, with slender smooth stramineous stalks 6–18 cm. long ; lamina triangular, in larger leaves broadly so, 6–10 cm. long, 3–9 cm. wide, lobed at the base or in larger leaves bearing a pair of separate pinnae which are again slightly lobed below ; margin of the terminal portion deeply crenate-incised in young leaves, in age becoming more deeply incised and with pointed rather than rounded divisions ; veins everywhere irregularly areolate with numerous free included veinlets ; main veins slightly fibrillose ; sori arranged in a somewhat irregular row on either side the main lateral veins with occasional ones in the outlying space ; indusium usually circular with a slit on one side forming a narrow sinus which is more often obscured by the overlapping folds.

Specimens have been examined as follows :

FLORIDA : Hammocks between Cutler and Longview Camp, 1903, *Small & Carter 855* (type) ; 10–14 miles south of Cutler, *A. A. Eaton 260.*

BAHAMAS : Conch Sound, Andros, *Northrop 562a ;* Near Nassau, New Providence, *A. H. Curtiss 142 ;* Farringdon Road, New Providence, *E. G. Britton 3198 ;* Abaco, *Brace 1815.*

CUBA : Yumury, *Rugel 2 ;* near Ibarra, *Britton & Shafer 344.*

This species has been passed over in herbaria for young forms of *Tectaria heracleifolia* (Willd.), but proves to be a distinct species differing in habit, in size, in texture, in the character of the venation, and in the indusia, which are not strictly peltate as in that larger and more common species. Small leaves resemble those of *T. coriandrifolia*, but differ (1) in being sharp-pointed instead of blunt at the apex, (2) in the longer pointed basal lobes in marked contrast with the short rounded ones of *Tectaria coriandrifolia*, and (3) in the venation. Grisebach has marked the sheet collected by Rugel as "*Aspidium fimbriatum* Willd.," but if we can trust Plumier's *plate 149* this is a species widely different and wholly unknown in our day, and one which is to be looked for in future collections from Hispaniola.

[The plant hitherto known as *Tectaria trifoliata* in Florida and the West Indies cannot henceforth bear that name. The true *Tectaria trifoliata*, based on Plumier's *plate 148*, proves to be a wholly distinct species. This was suspected by some of the earlier writers on ferns, but still others have maintained that the discrepancies noted were due to the inaccuracy or possibly idealization of Plumier's artist. With the now abundant collections at hand from all parts of the West Indies there is no longer a doubt that we have two very excellent species and that Plumier's artist is again justified. Our Florida species (ranging throughout the West Indies) is **Tectaria heracleifolia** (Willd.). (*Aspidium heracleifolium* Willd. Sp. Pl. **5**: 217. 1810; type from Hispaniola, based on Plumier *plate 147*, which is an extreme form of the species.)

This species has uniformly peltate indusia. The true *Tectaria trifoliata* (L.) Cav. has indusia varying on the same plant from reniform with a very broad sinus to circular with a mere emargination on the side, thus breaking down the supposed distinctions between *Tectaria* and *Sagenia* as hitherto maintained. The true *T. trifoliata* ranges from Cuba (where we have collected it on El Yunque) and Porto Rico to Guadeloupe, Martinique, Dominica, St. Vincent, and Grenada. It differs in texture, form of lobes, venation, and indusia, and many of its characters were clearly portrayed in 1703 by Plumier, whose illustrations can now be easily interpreted with ample material of both species at hand.]

Tectaria coriandrifolia (Sw.).

Aspidium coriandrifolium Sw. Jour. Bot. Schrader **1800**^{2}: 36. 1801. (Type from Jamaica, citing Pluk. Alm. *pl. 284. f. 5.*)

FLORIDA: 14 miles south of Cutler, 1903, *A. A. Eaton 563*. The Florida plants are smaller and somewhat less divided than the ordinary Jamaican forms, while the plants from Cuba are quite intermediate between them.

ODONTOSORIA CLAVATA (L.) J. Sm. Hist. Fil. 264. 1875.

Adiantum clavatum L. Sp. Pl. 1056. 1753. (Type from San Domingo, based on Plumier's *pl. 101. f. b.*)

Davallia clavata Sw. Syn. Fil. 123. 1806.

SOUTHERN FLORIDA: 12–20 miles south of Cutler, *A. A. Eaton*. Already reported by Mr. Eaton (*cf.* Fern Bull. **12**: 47).

The discovery of this species in Florida adds the third representative of its tribe (*Davallieae*) to our flora. The narrow truncate and almost cuneate segments make it an easily recognizable species. We have gathered the fern in Cuba, Porto Rico and

Jamaica, and it has been brought in several times from the Bahamas.

HYMENOPHYLLACEAE

DIDYMOGLOSSUM * SPHENOIDES (Kunze) Presl, Hymenoph. 23. 1843.

Trichomanes sphenoides Kunze, Linnaea **9**: 102. 1835; Die Farnkr. **1**: 215. *pl. 88. f. 2.* 1846. (Type from Peru, *Poeppig.*)

FLORIDA: Between Cutler and Longview Camp, 1903, *Small & Carter 1478.* This species was reported by A. A. Eaton under *Trichomanes* (*cf.* Fern Bull. **12**: 47). It is a common lowland species of tropical America.

DIDYMOGLOSSUM * KRAUSII (H. & G.) Presl, Hymenoph. 23. 1843.

Trichomanes Krausii H. & G. Icon. Fil. *pl. 149.* 1831. (Type from Dominica, *Kraus.*)

FLORIDA: Between Cutler and Longview Camp, 1903, *Small & Carter 1479, 1500.* Also reported by Mr. A. A. Eaton under *Trichomanes* (*cf.* Fern. Bull. **12**: 47).

EQUISETACEAE

EQUISETUM FUNSTONI A. A. Eaton, Fern. Bull. **11**: 10. 1903. (Type from San Bernardino, Southern California, *Coville & Funston 13.*)

SOUTHERN CALIFORNIA: Not very well represented in our herbaria, but a number of sheets are found in the collection at Washington.

Species inquirenda

Equisetum Ferrisii Clute, Fern. Bull. **12**: 22. 1904. (Type from Joliet, Illinois, *Clute.*)

Not seen; judging from characters given, a very doubtful species described entirely from sterile material.

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* The genus *Didymoglossum* was established by Desvaux (Ann. Soc. Linn. Paris **6**: 330. 1827), and differs from typical *Trichomanes* in the possession of a distinctly bilabiate involucre which is contracted below the mouth and bordered by the tissues of the leaf. It has been adopted by all the writers who have seriously monographed the filmy ferns since the time of Desvaux.

SELAGINELLACEAE

SELAGINELLA ACANTHONOTA Underw. Torreya **2**: 172. 1902. (Type from North Carolina, *Curtis*.)

NORTH CAROLINA: *Curtis*, *Williamson*.

GEORGIA: Tattnall County, *R. M. Harper 1852*; Dooly County, *R. M. Harper 1957*; Montgomery County, *R. M. Harper 1987*.

SELAGINELLA HANSENI Hieron. Hedwigia **39**: 301. 1900. (Type from Fisher's Cabin, California, *Hansen 878*.)

CALIFORNIA: Collected in Calaveras, Fresno and Butte counties.

Selaginella Parishii sp. nov.

Plants prostrate, close-creeping, and emitting rootlets throughout, much branched, with mostly short stems; stems 6–10 cm. long, mostly with short alternate branches or sometimes with more compound ones; leaves with a dorso-ventral arrangement, brownish below, bright-green above, 5–6-ranked, curved upwards and coiling over the stems when dry, broadly lanceolate, acute, ending in a point but with no terminal bristle, but with 6–20 very short marginal hairs on either side; sporophyls on the ends of short branches, scarcely differing from the leaves, forming short subquadrate strobiles; microspores orange-yellow, 40–50μ in diameter, sphero-tetrahedral, long remaining united in tetrads; macrospores yellow globose, about 350μ in diameter.

CALIFORNIA: Palm Springs, Colorado Desert, March, 1903, *C. F. Saunders* (comm. S. B. Parish); dry rocky mountains in the desert, April, 1882, *Parish 1200*.

MEXICO: Conception del Oro, Zacatecas, Aug., 1904, *Palmer 306* (type).

This species has been known to the writer as distinct for a number of years, and was mentioned in the original breaking up of the group which had passed under the name of *S. rupestris* (*cf.* Bull. Torrey Club **25**: 133. 1898), among the *species inquirendae*. Mr. Parish has more recently sent me specimens with microspores, and from Palmer's recent collections the same plant turns up from Zacatecas with both microspores and macrospores; all the above-named plants are in the herbarium of the New York Botanical Garden.

SELAGINELLA SHERWOODI Underw. Torreya **2**: 172. 1902. (Type from Macon County, North Carolina, *Sherwood*.)

NORTH CAROLINA: Macon County, 1887, *J. Donnell Smith;* 1901–2, *W. L. Sherwood.*

SOUTH CAROLINA: *J. Donnell Smith.*

SELAGINELLA SCHMIDTII Hieron. Hedwigia **39**: 292. 1900. (Type from Sachalin, *Schmidt.*)

UNALASKA: *Chamisso.* Professor Hieronymus also described a var. *Krauseorum, loc. cit.* 293, which was collected in rock fissures on the river Tlehini, Alaska, by the Krause brothers in 1882.

SELAGINELLA UNDERWOODII Hieron. Die Nat. Pflanzenf. **1**^{4}: 714, note. 1901.

Selaginella rupestris Fendleri Underw. Bull. Torrey Club **25**: 127. 1898. (Type from Santa Fé, New Mexico, *Fendler 1024.*)

Selaginella Fendleri Hieron. Hedwigia **39**: 303. 1900. Not *S. Fendleri* Baker.

Colorado, New Mexico, and California; has been sent in by various collectors.

SELAGINELLA WALLACEI Hieron. Hedwigia **39**: 297. 1900. (Type from Oregon, *Wallace.*)

Oregon and Washington; has been sent in by recent collectors.

SELAGINELLA WRIGHTII Hieron. Hedwigia **39**: 301. 1900. (Type from New Mexico, *Wright 828.*)

Known only from its type collection.

Species inquirendae

The following species are known only from their original collections. It is perhaps better to await further collection and study before admitting them to full standing.

Selaginella montanensis Hieron. Hedwigia **39**: 293. 1900. (Type from Crossing, Montana, 1882, *Krause.*)

Selaginella Bourgeauii Hieron. Hedwigia **39**: 295. 1900. (Type from Fort Ellice, Oregon, *Bourgeau.*)

Selaginella Haydeni Hieron. Hedwigia **39**: 296. (Type from Nebraska, *Hayden;* also collected in Washington (then Oregon), *Lyall.*)

Selaginella Bolanderi Hieron. Hedwigia **39**: 300. 1900. (Type from Auburn, California, *Bolander 4511.*)

Selaginella sp.

FLORIDA: Dade County, *Small & Carter*, *A. A. Eaton.*

Erroneously reported by Mr. B. D. Gilbert as *Selaginella caribensis* Jenman, a species of the higher mountains of Jamaica (*cf.* Fern Bull. **13**: 74. 1905). We await a report on this interesting species from Professor Hieronymus.

Species excludenda

Selaginella Engelmanni Hieron. Hedwigia **39**: 294. 1900 = *S. densa* Rydb. and is therefore not to be included in the list except as a synonym.

ISOETACEAE

ISOETES OCCIDENTALIS Henderson, Bull. Torrey Club **27**: 358. 1900. (Type from Lake Coeur d'Alene, Idaho, *Henderson 5876.*)

Isoetes lacustris paupercula Engelm. Trans. Acad. Sci. St. Louis **4**: 377. 1882.

Isoetes paupercula A. A. Eaton, Proc. U. S. Nat. Mus. **23**: 649. 1901.

Colorado to California, Idaho, and Washington.

In accordance with the now established doctrine that *species* and not varieties are the units of classification, this name set aside under former rules should be restored. The writer wishes to record the fact that he has persistently opposed the principle of giving varietal names a standing in nomenclature since it was proposed at the Madison meeting and there voted. The pernicious effects of this principle have been fully appreciated by all who have tried it on any extensive scale.

ISOETES HETEROSPORA A. A. Eaton, Fernwort Papers 8. 1900. (Type from Jordan Pond, Mt. Desert Island, Maine, *Rand.*)

Known only from its type locality.

ISOETES HIEROGLYPHICA A. A. Eaton, Fernwort Papers 10. 1900. (Type from St. Francis Lake, Maine, *Pringle.*)

MAINE: Reported from several stations.

ISOETES GRAVESII A. A. Eaton, Fernwort Papers 14. 1900. (Type from Connecticut, *Graves*, *Underwood.*)

CONNECTICUT: Known from one or two ponds in western Connecticut. A fine series was collected by the writer some years ago at Tyler Pond, in Goshen, which is now in the herbarium of the New York Botanical Garden.

Species excludenda

Isoetes Harveyi A. A. Eaton, Fernwort Papers 11. 1900. (Type from Maine, *Harvey.*)

Mr. Eaton now regards this as a variety of *I. Tuckermani*, and we therefore exclude it from the list of species.

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